



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

THE PROBLEM OF LABOR TURNOVER

The typical handicraftsman of the Middle Ages pursued the same trade all his life, with the exception of the wanderjahr, in the same town. The Industrial Revolution has increased the mobility of labor in at least four different ways: (1) In the movement between countries. Individual migration as opposed to group migration has been the characteristic since the Industrial Revolution. The growth of America, Canada, and Australia during the nineteenth century was made possible largely by the development of steam power. (2) In the movement between different sections of the same country. The American of today does not stay predominantly in the place of his birth. He moves about from place to place. The Russell Sage Foundation found that of 22,000 men investigated in 78 cities, only 16 per cent had been born in the city in which they were then living.¹ Of native-born Americans, only one quarter were living in the city of their birth. (3) In the rapid change of residence in any given locality. The modern worker, while in a town, rarely lives long in any one apartment or house. He moves almost unceasingly. (4) In the frequent changing of positions. The workman may leave one plant to enter either another plant in the same industry or one in a totally different industry.² Recent studies have shown how transitory the modern wage relation is and how temporary is the occupancy of any particular position.

It is the purpose of this article to consider solely this rapid flux from position to position, and to examine its nature, extent, its cost, and its causes and remedies.

1. What is "Labor Turnover"?

The term "labor turnover" has been given to this rapid change from position to position. The size of the labor turnover depends upon the proportion that the total number of employees hired during a year bears to the size of the labor force that must be maintained. To illustrate: a plant which employs 1,000 men at the beginning and end of a given year hires during that year another thousand. That means that as many men have been newly hired as were employed at the beginning of the year and that

¹ L. P. Ayres, *Some Conditions Affecting Problems of Industrial Education in Seventy-Eight American School Systems*, p. 7.

² See Paul de Rousier's *The Labor Question in Britain*, p. 288 ff.

2,000 men have been employed during the year to fill 1,000 jobs. This is an excess of 1,000 men over what would have been needed had the original force stayed through the year, and is reckoned as a 100 per cent labor turnover. Had only 500 new men been hired during the year, the turnover would have been 50 per cent; had 2,000 men been hired it would have been 200 per cent.

In computing the labor turnover, however, allowance must be made for the growth or decay of an industry during the year. Suppose that the given plant, which employed 1,000 men at the beginning of the year, had increased its labor force to 1,200 by the end of the year; then 200 of the 1,000 men newly hired would not represent replacements but net additions to the working force, and 800 would constitute the actual replacements. The labor turnover in this case can be reckoned on either of two bases: (1) the number of workers employed at the end of the year, which was 1,200; (2) the average number employed during the year, which would have been 1,100 if the additions had been evenly distributed throughout the year. The labor turnover, by the first method, would be 67 per cent; by the second, it would be 73 per cent. Had only 500 men been newly employed during the year, the turnover would have been one of 25 per cent or 27 per cent; had 2,000 men been engaged, it would have been 166 per cent or 182 per cent. Had the total working force declined to 800 by the end of the year, the labor turnover would have been respectively 125 per cent or 111 per cent; 63 per cent or 56 per cent; 250 per cent or 222 per cent. Because of the confusion in computing the turnover in percentages, perhaps a better way to measure it is to state the average length of a job. If three months, it would be the equivalent of a 400 per cent turnover. Few investigations have measured the turnover in this latter way, however.

It is quite clear that some labor turnover is inevitable. Men who die or fall sick or are injured must be replaced. Since the men and women in industry are predominantly in those age groups where mortality is lowest, it is extremely probable that the death rate does not greatly exceed 10 per 1,000, or 1 per cent. Sydenstricker and Warren estimate that the American wage-earner loses on an average about nine days a year because of sickness alone.³ On a basis of 300 working days during the year, this

³ B. S. Warren and Edgar Sydenstricker, *Health Insurance, Its Relation to the Public Health*, Public Health Bull. no. 76, p. 6. See also *American Labor Legislation Review*, vol. VI, p. 156, which gives studies of Rochester, N. Y., and Trenton, N. J., that bear out Warren and Sydenstricker's estimate.

would be an average loss of 3 per cent of the working time. But a corresponding 3 per cent labor turnover does not necessarily follow, because illness that is only of short duration does not occasion replacement. Industrial accidents furnish another small source of the labor turnover. Non-fatal accidents may necessitate a replacement of from 1 per cent to 2 per cent. However, taken all together, these causes would not be responsible for a turnover of more than 5 or 6 per cent.

2. *The Amount of the Labor Turnover*

No complete survey of the amount of labor turnover in plants throughout the country is as yet forthcoming. The Bureau of Labor Statistics has been investigating this problem for over two years, but the results of their research have not yet been made public. Several studies of typical plants in different sections of the country, however, afford a birdseye view of the actual situation.

Mr. W. A. Grieves, of the Jeffery Manufacturing Company, in December, 1914, made the first detailed analysis of the extent of the labor turnover. Mr. Grieves obtained the employment figures of 20 metal plants in the Middle West and found that to maintain an average of 44,000 hands during the year, they were compelled to hire a total of 69,000. The labor turnover for these plants was consequently 157 per cent for the year.⁴

Mr. Magnus Alexander, of the General Electric Company, published a study on this subject in 1915. After an investigation of the employment records for 1912 of twelve metal manufacturing plants in six states, he found that this group, which employed 37,274 workmen at the beginning and 43,971 at the end of the year, had hired during that year 42,571 new employees.⁵ Deducting the net increase of 6,697 in the working force, there were 35,874 replacements during that year. Using the number employed at the end of the year as a base, this would be a labor turnover of 82 per cent. Supposing that the increase had been evenly distributed throughout the year and using 40,623 as a base, the turnover for these plants would be 88 per cent.

Mr. Boyd Fisher, after analyzing the employment figures for

⁴ W. A. Grieves, *The Handling of Men* (published by the Executives' Club, Detroit Chamber of Commerce), p. 3.

⁵ Magnus W. Alexander, "Hiring and Firing, the Economic Waste and How to Avoid It," *American Industries*, August, 1915, p. 18.

the last year in 57 Detroit plants, found that the average turnover for the group was 252 per cent.⁶ The Ford Company from October, 1912, to October, 1913, hired 54,000 men to maintain an average working force of 13,000. This was a labor turnover of 416 per cent for the year.⁷ The figures from other plants are almost equally striking. A large Philadelphia concern had a labor turnover of 100 per cent in 1911.⁸ The turnover of the Plimpton Press was 186 per cent in 1912.⁹ The Pacific Telephone and Telegraph Company, of Portland, Oregon, hired 202 new girls in three months to maintain an average force of 700. If this is typical of the year, the turnover was 115 per cent. Mr. Gregg has stated that the turnover of the carding department of a certain cotton mill was over 500 per cent for one year.¹⁰ Representatives of the Goodrich Tire Company have declared that their turnover in former years was nearly 200 per cent and that for the last year it has been even higher!¹¹

The turnover for juvenile labor is especially high. The Board of Education of Rochester, New York, found that boys between the ages of fourteen and sixteen changed their jobs on the average every seventeen weeks.¹² This is a turnover for juvenile labor of over 300 per cent. The employment records of Swift and Company of Chicago show that the average term of employment for a boy in their service was only three and a half months.¹³ This means that nearly three boys and a half are employed every year for each position or, to be accurate, that there is a labor turnover of 342 per cent. Figures from Indianapolis, Indiana, show that of 6,710 jobs held by children leaving school, 7 per cent were for less than two weeks; 15 per cent for less than a month; 30 per

⁶ Boyd Fisher, "How to Reduce the Labor Turnover," *Annals of the American Academy*, vol. LXXI, p. 14.

⁷ Boyd Fisher, *Methods of Reducing the Labor Turnover*, Bulletin of the United States Bureau of Labor Statistics 208 (Proceedings of Employment Managers' Conference, p. 15).

⁸ J. H. Willetts, "Steadying Employment," supplement to the *Annals*, vol. LXV, p. 70.

⁹ Jane C. Williams, "The Reduction of the Turnover of the Plimpton Press," *Annals*, vol. LXXI, p. 80.

¹⁰ R. C. Gregg, "A Method of Handling the Problem of Labor Turnover," *Textile World Journal*, April 28, 1917.

¹¹ John A. Fitch, "Making the Boss Efficient," *The Survey*, vol. 38, p. 211.

¹² *Fifty-sixth Annual Report of the Board of Education*, Rochester, N. Y., p. 142.

¹³ Bulletin National Association of Corporation Schools, April, 1916, p. 13.

cent for less than two months; and 48 per cent, or practically one half, for less than three months.¹⁴

The figures for manufacturing indicate, therefore, that the turnover for this branch of industry is extremely high. Mr. Ernest M. Hopkins, who has had a great deal of experience as an employment manager for several large industrial concerns, has said that a conservative estimate for many industries would be 100 per cent.¹⁵ Mr. Ethelbert Stewart, who was in charge of the field work for the Bureau of Labor Statistics, has stated that some firms have as high a turnover as 400 per cent.¹⁶

The turnover in many branches of agricultural and construction work is even greater. Professor Carleton Parker, in a most interesting study of casual labor on the Pacific coast, cites a dried fruit farm in California that had a monthly turnover of 176 per cent; a construction job in the Sierras, with a normal force of 950 men, which had a monthly turnover of 158 per cent; and a ranch with a nine weeks' fruit season which had a monthly turnover of 245 per cent.¹⁷ After a careful investigation, he concluded that the average duration of a job in certain kinds of work was as follows:¹⁸

	Days
Lumber camps	15-30
Construction work	10
Harvesting	7
Mining	60
Canning	30
Orchard work	7-10

3. *The Cost of the Labor Turnover*

A high labor turnover is not always an economic waste to the employer. A plant with many rush orders paying high wages may find it to its economic interest to drive its workmen at such a pace that they will be exhausted at the end of a few months. The old group of workmen can then be discharged and a new group employed. Many munition factories in the United States followed such a policy during the years 1915 and 1916. Though

¹⁴ Adapted from figures given in Bulletin no. 21, Indiana State Board of Education, *Indianapolis Vocational Survey*, vol. I, p. 119.

¹⁵ *Proceedings Third Annual Convention, National Association of Corporation Schools*, p. 758.

¹⁶ Bulletin of the United States Bureau of Labor Statistics 202, p. 8.

¹⁷ Carleton H. Parker, "The California Casual and His Revolt," *Quarterly Journal of Economics*, vol. XXX (Nov., 1915), p. 121.

¹⁸ *Ibid.*, p. 122.

this is of course poor economy from the standpoint of social efficiency, and has been so recognized in both England and America under the stress of war, yet it may well have been a paying policy for many firms.

As a rule, however, the employer suffers a very real economic loss from a high turnover. Although it is impossible to obtain exact figures on the cost of the excessive hiring and firing, careful estimates are fortunately available. The principal items that enter into the cost of employing new men are:

1. The clerical cost of hiring and firing. This includes the time of the official (generally the overseer) who discharges the old worker and employs the new, plus the time spent on the additional pay-roll and other records.

2. The cost of the instruction given the new employees by the foremen and the assistants. Even if the workman is experienced, considerable time must be spent in explaining the details peculiar to that particular plant. The cost of training a worker for a skilled or semiskilled position is much larger still.

3. Decreased production by the new worker before coming up to full working capacity. It takes time to "warm up" to one's work and reach the maximum of efficiency. Rapid shifting of men perpetuates this period of novitiation with its greatly diminished productivity.

4. Breakage and damage caused by the new man. This includes: (a) the actual breakage of a machine or tool; (b) the stoppage of a machine, or the delay of work; (c) accidents to the workers, for which the employer is liable under workmen's compensation laws; (d) the wasting or destruction of material upon which the new worker is employed.

5. The cost of idle machinery and equipment where the old position is not immediately filled.

The cost per man naturally varies with the type of worker. Alexander classifies the employees under five heads:

- A. Highly skilled mechanics who have spent years in attaining their present proficiency.

- B. Mechanics of lesser skill who secured their training in a year or two.

- C. Operatives who, without previous experience, can acquire a fair degree of efficiency within a few months.

- D. Unskilled laborers needing practically no training.

- E. The clerical force.

His careful estimate of the expense per man for the various groups is as follows:¹⁹

A	\$48.00
B	58.50
C	73.50
D	8.50
E	29.00

This is of course only an estimate, although a very careful one. Mr. Grievess estimated that the per capita cost averaged at least \$40.²⁰ Mr. John M. Williams, of the Plumb Company of Philadelphia, a tool-making concern, states that "the final cost per experienced man is over \$100."²¹

Mr. Alexander estimated that the annual unnecessary expense for the twelve factories that he covered was between \$830,000 and \$1,000,000. If Mr. Grievess's estimate of an average cost of \$40 is used, the total yearly loss for the twenty firms which he investigated was \$1,760,000 or an average of \$88,000 per firm. The yearly cost to the Ford Company for its 416 per cent turnover was over \$2,000,000. Since these are figures for only a few plants, the annual cost for the country as a whole must be tremendous. A most conservative estimate would be between one and two hundred millions.

4. Causes and Remedies of the Labor Turnover

This excessive shifting from position to position clearly demonstrates that something is wrong with industry. In diagnosing its causes, we are at the same time enabled to suggest certain remedies that may lessen it.

Some of the more prominent causes are:

1. Poor methods of employment and discharge. Men are generally hired *en masse* with little regard to their qualifications and fired summarily if they do not make good on the jobs upon which they are tried out. The power of employment and discharge is generally vested in the foreman of each department. These men are rarely skilled in the tactful handling and judging of men.

2. Poor methods of promotion within the factory. Work in one position rarely leads to a higher position. The workman, in

¹⁹ Alexander, *op. cit.*, pp. 20-21.

²⁰ W. A. Grievess, *op. cit.*, p. 5.

²¹ John M. Williams, "An Actual Account of What We Have Done to Reduce Our Labor Turnover," *Annals*, vol. LXXI, p. 54.

any particular plant, relies therefore upon a change to some other plant to better his status.

3. The seasonal nature of many industries. The turnover is necessarily large where the volume of output is not evenly distributed over the year. After the "peak" has been passed, many workmen must be laid off. If the peak reoccurs within a few months, a new force must be employed. Positions of short duration spelling a high turnover are the inevitable concomitants of seasonal industry.

4. Juvenile labor. Children rarely stay long in one position. The 14-16 year-old child is restless and wants to move about. A regular, settled employment rarely satisfies him.

5. The monotony of modern factory labor. This is rarely mentioned as a cause of labor turnover, but on *a priori* grounds we must infer that it exercises tremendous influence. Specialization and routine labor have rendered industry so dull that it is no wonder the modern artizan frequently throws up his job and seeks another plant from sheer weariness.

6. Low wages. A plant that pays low wages cannot hold men long. They regard the job as a makeshift and will leave it as soon as they can find another.

Thus some of the causes of this newly discovered phenomenon are long-recognized evils while some have been but newly brought to light. The remedy most frequently proposed by students of the situation is the installation of a specialized employment department to have complete charge of the hiring, handling, and firing of men. In most factories the task of employment and the discharge of men is confided to the foremen of the various departments. Hands are both hired and fired in a hit or miss fashion. Many firms keep no employment records at all and most of those that do keep such records have only scanty material. They seldom ask the reasons for the workman's leaving; nor do they measure the turnover department by department. The centralization of employment and discharge and the concentration of responsibility would permit the use of scientific methods.

Such a department could lessen the turnover in the following ways:

1. By the use of a better method of selecting employees. Physical tests would eliminate a considerable number that are now employed only to be shortly discharged. Though mental tests have not developed as yet so far as to make it possible to assign

men to the particular jobs for which they are best adapted, at least those mentally incompetent for industry could be eliminated. The various jobs in the plant could, moreover, be analyzed in respect to the amount of skill and intelligence required of the operative. The workers could then be divided into rough groups according to their previous training and innate mental ability and then assigned to the corresponding grade of work. A centralized personnel department could follow up and verify work references and thereby classify workers on the basis of past experience. And it could maintain a waiting list, so that when new men were needed, they could be chosen largely from men about whom something was known instead of, as now, being picked up off the streets.

2. By a system of follow-up work for the new employees. This would include taking them to their place of work and indicating a friendly interest towards them. The training should be given preferably by special instructors and not confided to the foremen. In many cases it is best to give the new men preliminary training before they are actually placed in any department. Moreover, the working conditions should be closely watched by the personnel department in order to ensure proper ventilation, lighting, the prevention of dust, and the lessening of fire and accident risks. To keep a record of absences classified by individuals and by causes would also be a legitimate task for such a department.

3. By an investigation of the reasons for the successes and failures of individual workmen. The method commonly employed is to discharge a workman if he fails to make good on a particular job. This involves a great waste. A workman may fail on a specific job and yet be a valuable man for the concern. It may be that the antagonistic attitude of the foreman or the men is such that he cannot do himself justice. It may be that he is ill-adapted to that particular position but would be perfectly competent in a position in some other department. The worker embodies a considerable investment of capital by the employer and is worthy of at least another trial before he is discharged. The personnel department can find out the reasons for his lack of success and act accordingly.

Should the worker succeed in a given position, he should be commended and assured promotion. A well defined promotion policy would indeed save many a plant a great deal of dissatisfaction and lessened efficiency. The efficiency of the plant and

the loyalty of the workers may be further heightened by the institution of discussion groups at which plant problems can be explained and workmen's ideas solicited. This will also serve to bring to light hidden talent which could be utilized in executive work.

The creation of such a personnel department, charged with these functions, is but the logical extension to the human side of industry of the scientific principles that have hitherto been employed on the mechanical side. It merely strips the department foreman of his employment functions and enables him to concentrate his attention upon the actual production of goods. With this splitting of the task, greater specialization and efficiency can result. The centralized employment department has been tried in many plants, and on the whole has been very successful.²² Some illustrations of its success are: (1) the reduction by the Dennison Manufacturing Company of its turnover from 68 per cent to 37 per cent a year; (2) the reduction of the turnover by the Joseph Feiss Company of Cleveland, Ohio, to one third its former amount; (3) the lowering of the Plimpton Press turnover till it is now only 10 per cent a year. Other factors besides that of the creation of such a department contribute to the marked decrease in three of these plants. Forms of profit-sharing were introduced into the Dennison and Ford companies, while the Dennison and Feiss plants also succeeded in regularizing their output;²³ (4) the decrease in the Ford turnover from 416 per cent to less than 80 per cent.

Small concerns would probably not find it profitable to create a special personnel department. Consequently this is one of the advantages of large-scale production. Whether there is a greater

²² There are probably over 500 employment managers in the United States as a whole. The following cities have local associations of employment managers: Boston, Chicago, Cleveland, Detroit, Newark, New York, Philadelphia, Pittsburgh, Rochester, and San Francisco. The following are among the large concerns that have special employment departments: Sears Roebuck & Co.; Marshall Field & Co.; Armour & Co.; Packard Motor Car Co.; Ford Motor Co.; Equitable Life Insurance Co.; R. H. Macy & Co.; American Tel. & Tel.; Curtis Pub. Co.; John B. Stetson Co.; Westinghouse Electric Co.; Eastman Kodak Co.; Dennison Mfg. Co.; Cheney Bros. See J. H. Willetts, "Development of Employment Managers' Associations," *Monthly Review of the United States Bureau of Labor Statistics*, vol. V, no. 3 (Sept., 1915), pp. 85-87.

²³ Gregg, *op. cit.*

turnover in the larger plants which will offset this advantage is a question that cannot be answered at present.

Profit-sharing is another method of ensuring greater permanence of labor. Mr. Boris Emmet, who investigated profit-sharing schemes for the Bureau of Labor Statistics, says, "All of the informants, without exception, were also of the opinion that the establishment of the plans have a tendency to reduce the percentage turnover of their working organization."²⁴

In so far as the labor turnover is caused by the seasonal nature of industry, the creation of a specialized employment department would offer no remedy. Once the cost of labor turnover is recognized, the employers will see that the regularization of industry and the smoothing of the peaks of production will be economically beneficial to them. The efforts of the Clothcraft Shops of Cleveland and the Dennison Manufacturing Company have been turned especially in this direction.

The large turnover of children between fourteen and sixteen is merely another proof of the economic and social wastefulness of this class of labor. Industry and society would be much better off were the age of entrance into industry raised generally from fourteen to sixteen years. In so far as the labor turnover is due to the monotony of machine labor, few remedies within the plant can be devised. The men, to be sure, can be transferred from one machine to another.²⁵ But this is about all. The balking of man's innate tendency towards contrivance seems to be an inevitable consequence of the machine era. New avenues must be opened, outside of industry, for its legitimate expression.

Whatever may be the final steps taken to solve this problem, its recognition signalizes a marked advance in the development of human engineering.

PAUL H. DOUGLAS.

Reed College.

²⁴ *Profit-Sharing in the United States*, Bulletin of the United States Bureau of Labor Statistics 208.

²⁵ Mr. Dennison does this in his factory.